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Discussion

## Comments on “Optimal fiscal and monetary policy under imperfect competition”

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### 1. Is this a good approach?

There are many avenues to studying or recommending economic policy. Most common in public debates is an approach, where someone offers some amazingly precise policy conclusion (“the age of mandatory retirement should be 67”) based on an equally amazingly vague or secondary policy objective (“financial viability of the pension system in the long run”). Similar examples abound in monetary policy analysis (“lower interest rates so as to help Europe restore growth”). With little discipline to the debate, anyone can float his or her personal favorite recommendation. The debate then seems to generate many different recommended solutions to choose from or to be debated. Closer examination often reveals that the different recommendations are simply either solutions to different problems or that there is no reasonable problem that these recommendations might be a solution for. The only way to restore discipline is to agree on the objective first, and to make sure that it is the appropriate one. Regrettably, in the circles of practical policy, there often is too little patience or too little depth to pursue such an approach. Lobbyists have a keen interest in hiding their objectives. And often, experts are called in to offer advice on problems which bizarrely are never fully articulated. What to do? The expert might know that he or she does not know and stay quiet—but then risk that the debate is ruled by those who do not even know that. Alternatively, the expert might offer seemingly precise advice, hoping that a blurry vision is still better than none at all for the purpose of recommending a direction to take (thus, the recommendation of retirement at age 67).

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Finally, the expert can try, however painfully slow progress might be, to put the discipline back into the policy debates and to teach the policy maker and the public how to ask the right questions. For that, science needs to offer clear guidance as to how policy choices should be discussed, at least in principle. Economic models, however abstract they may seem, probably offer the best training ground for future experts and policy makers alike: to enable them to proceed with clear logic, to always ask for the problem that a proposed solution is meant to solve, to turn on the inner guiding light to find the right direction. Without that, policy debates remain what they often seem to be: random walks in utter darkness, accompanied by fierce battles over every little step that is taken.

The strength of these models does not necessarily lie in their conclusions but in the discipline of analysis they teach and in the clean and logical tie of conclusions to assumptions. The paper at hand is a wonderful example for this. Trained by such models, one can venture into educated guesses about stating problems of practical relevance and their practical solutions, if one must and with the appropriate care.

Thus, what are the approaches to studying monetary policy choices offered by economic science? There are a number of positive approaches (“What are the effects of monetary policy?”), like large-scale econometric models, vector autoregressions, sticky-price models with particular parametric policy rules, e.g. Taylor rules, or game-theoretic formulations of the interactions between the monetary authority and, say, fiscal authorities or labor unions. But to make normative recommendations, one needs a normative approach. Often, a certain objective like some central bank loss function in unemployment and inflation, is formulated, and the corresponding maximization problem is solved.

Schmitt-Grohé and Uribe, following the lead of Ramsey, Chamley, Chari–Christiano–Kehoe and others, go deeper. Policy is chosen, given the constraint that the economy is in a competitive equilibrium and given that a well-specified and limited set of policy instruments is available. The behavior of the agents is fully micro-founded. The objective of the policy maker is to maximize the utility of the agents populating the economy, in short, to make them happy. Indeed, economic happiness is what economic policy should pursue, should it not? Thus, this paper is taking exactly the right approach. One cannot overemphasize it: everyone who wishes to analyze economic policy or make economic policy recommendations should follow the approach taken by Schmitt-Grohé and Uribe (SGU), i.e. should take a Ramsey approach, at least in principle. For a wonderful textbook introduction to the Ramsey approach, read Ljungqvist and Sargent (2000, Chapter 12). (Here, the analysis is obviously considerably simplified by the fact that all agents think alike: there is a representative agent, and agents do not disagree about what makes them happy. Arguably, the analysis becomes harder when this is not the case, as would be appropriate for analyzing, say, reforms of the social welfare and pension system and mandatory retirement. Agent heterogeneity should eventually also deserve attention in the analysis of monetary policy.)

## 2. The constraints of the Ramsey planner

Taking this approach opens one's eyes towards the specific assumptions made and to the particular constraints imposed on the Ramsey planner.

If there are no constraints and the Ramsey planner is free to choose any allocation, we obtain the first-best social planner solution. The key is the limit to policy instruments:

- *Prices*. Are they flexible (Schmitt-Grohé and Uribe, 2004) or sticky (Schmitt-Grohé and Uribe, 2003)?
- *Taxes*. Are they only on labor (SGU)? Why not also on profits or lump sum?
- *Government debt*. Nominal, uncontingent (SGU)? Or state-contingent? Real?
- *Competition*. Fixed monopolies (SGU) or free entry?
- *Capital*. None (SGU) or an accumulable, taxable factor of production (Chamley, 1986)?
- *Trade, international capital markets*. Closed economy (SGU) or open?
- *Government spending*. Exogenous (SGU) or to-be-optimized?

Further, for practical monetary policy in Europe, one may want to recognize that there is no single economic policy body but (at least) a separation of monetary and 12 fiscal authorities: studying this interplay will certainly be an interesting extension for the future (see also Uhlig, 2003).

All these are choices the modeller needs to make. Different assumptions yield different conclusions. This is always the case. In many ways, the whole point of the approach is to make one keenly aware of this. The paper by Schmitt-Grohé and Uribe is a pioneering step in the right direction. It allows us (for the purpose of this discussion, not as the appropriate scientific analysis, which needs to do this cleanly and step by step!) to speculate whether we should buy into their results as robust under reasonable sets of assumptions.

## 3. Should we buy into the results?

This is equivalent to: should we buy into the assumptions? Thus, let us examine three key lessons the paper offers and try to understand the intuition and the assumptions generating them.

### 3.1. Result 1: The Friedman rule is a bad idea

The Friedman rule recommends to equate the social costs of creating money ( $\approx 0$ ) to the private costs (the nominal interest rate) of holding money. I.e. the nominal interest rate should be zero, the economy should be satiated with liquidity, and there should be slight, ongoing deflation. To most, and in light of the recent experience in Japan, this may sound like a liquidity trap and a recipe for disaster. In models of monetary economics, the Friedman rule emerges surprisingly robustly as optimal,

though, see Chari et al. (1991) and the ensuing literature. Is there a way out? I.e., are there good reasons why zero interest rates are not good monetary policy?

This paper would seem to offer one. The Friedman rule is *not* optimal, because the Ramsey planner wants to *tax profits*. But is this a valid argument robustly emerging from this analysis? I doubt it: other, reasonable specifications of the model might offer a variety of ways to tax profits other than through inflation. This is not the reason why many feel uneasy about the Japanese situation. Rather, it is constraints of the sort, that the central bank cannot lower nominal rates below zero even though it may want to.

Nonetheless, the paper by Schmitt-Grohé and Uribe reminds us powerfully, that such a conclusion needs careful analysis. When and why might a “liquidity trap” constitute a problem? For example, deflation is not bad per se: in fact, it is—per se—a good thing because it rewards the holders of cash with real interest payments in the form of an appreciating currency in terms of domestic goods. It may be a bad thing if it distorts price relationships in the presence of nominally fixed prices, a topic investigated by Schmitt-Grohé and Uribe (in press). Certainly, the Ramsey approach pursued here teaches us that we need to think much harder about what is wrong with deflation than is commonly done in the hasty (but relevant!) debates about this topic. And perhaps only then can sensible solutions emerge. This is a particularly burning policy issue where a Ramsey-based approach can be particularly informative, if it takes the “liquidity trap” concerns into account. Indeed, a recent literature has begun to emerge, investigating this topic in greater depth, see e.g. Uhlig (2000), Benhabib et al. (2001, 2002) or Eggertson and Woodford (in press).

### 3.2. Result 2: Inflation should be volatile

The intuition for this result is as follows.

- There are shocks to the present value  $G$  of future government spending. Government bonds are nominal and not state-contingent.
- Future wealth is elastic. The Ramsey planner should try not to distort the decision of consuming today vs. consuming tomorrow. Thus, he should not tax wealth on average.
- But: at the beginning of each period, current wealth is a fixed factor. Thus, it is optimal to give wealth to agents in case  $G$  declines and to take wealth from agents in case  $G$  increases.
- But: there is no wealth tax.
- So: engineer this with inflation fluctuations to state-contingently adjust the real value of outstanding nominal government debt.

What should we think about this result?

- Indeed, this is a stable insight insofar as monetary policy can react more quickly and that government debt is nominal and not state-contingent.

- But: the result disappears with slight price stickiness. This, in fact, is precisely the point of Schmitt-Grohé and Uribe (in press), “Optimal Fiscal and Monetary Policy under Sticky Prices”.

### 3.3. Result 3: Inflation should be positive (4%), nominal interest rates substantial (8%)

The intuition:

- There are monopoly profits, but they cannot be taxed directly.
- To acquire the goods from the monopolist, households require money.
- Hence, inflation can be used to indirectly tax monopoly profits.

Is this a result that one should take away as a robust conclusion? Perhaps, this is a stylized description of Russia in the early 90s: no tax base, but Rubles circulate. The inflation tax was indeed used as the practically only source of government revenue. Or consider Columbia: drug trade is hard to tax directly, but requires suitcases of cash. One could contemplate using inflation to tax drug trade. Be careful, though: cash here means Dollars or Euros, so inflation in the US or Europe would be required. Plus, “good money drives out bad money”: drug lords will use the most stable currency. Similar points could be made for other criminal activities and black-market trades. But: is the inflation tax a good way to tax monopoly profits in well-functioning societies? I believe, the answer is: no.

- There are *lots* of taxes! Fiscal authorities are endlessly creative. They can surely tax monopoly profits.
- Free entry makes profits a reward for innovative activity, which one may want to subsidize rather than tax! Profits are not a fixed factor in many models, see Aghion and Howitt (1998).

Here is the upshot: except for extreme circumstances, there are better ways to tax economic activity than through inflation. Taxing profits is *not* a good reason for creating inflation.

### 3.4. Result 4: Less competition implies higher labor income taxes and higher nominal interest rates

As intuition:

- Higher nominal interest rates serve as a means to tax profits. For intuition and assessment, see result 3.
- And here is why a higher labor income tax is required:
  - Government spending is given.
  - Less competition means less output.
  - To finance the given amount of spending requires higher labor income taxes
    - ...which create additional distortions and reductions in output,
    - ...making further labor income taxes necessary, etc. “Multiplier effect”.

Table 1

Comparison of labor income tax rates to the government expenditure to wage income ratio

$\mu$	1 (%)	1.1 (%)	1.2 (%)	1.35 (%)
$g/y$	16.6	18.2	20.1	23.8
so: $g/(wh)$	16.6	20.1	24.1	32.2
Compare to: $\tau$	18.8	22.6	26.6	33.0

Note that the last two lines are similar, i.e., the inflation tax contributes quantitatively little to finance government expenditures.

To assess this result, consider the quantitative importance from the calibrated numbers in Table 2. In Table 2 of SGU, use  $g/y \approx (y - c)/y$  and  $g/(wh) \approx \mu g/y$  and compare labor income tax rates to the government expenditure to wage income ratio, see Table 1. Without access to the inflation tax, the last two lines in this table would have to be equal,  $\tau = g/(wh)g$ . (There are some additional general equilibrium effects from eliminating the inflation tax which we are ignoring here.) Thus, we learn from the comparison above that the inflation tax contributes little resources.

#### 4. Where to go from here?

This paper is a beginning. There are lots of avenues worthy of further exploration.

- One could investigate a number of variations for various constraints on monetary policy and various extensions of the model.
- One could analyze “Ramsey games”, in particular the game of many fiscal authorities versus one central bank.
- One definitely should re-investigate the optimality of the Friedman rule and juxtapose it to thinking about zero interest rates as a “liquidity trap”.
- One could base other research on monetary policy analysis (or economic policy generally) more firmly on the Ramsey approach.

I do like this paper. It is pathbreaking and it is progress. We should all follow Schmitt-Grohé–Uribe and use “Ramsey” in thinking about economic policy: proper policy analysis should be based on the Ramsey-approach, at least in principle. This is the right approach. Perhaps the most important lesson to take away from this paper is the discipline it imposes on the policy debate. Thus, one should not take the policy conclusions drawn here as the key insights. They are important, but only insofar as they follow from the particular assumptions made. We need to keep investigating variations of these types of models. The search is on for a list of results robustly emerging across a number of reasonably specified models with policy chosen according to “Ramsey” principles. In particular, we certainly need to understand more clearly the role of the lower bound at zero on nominal interest rates. Based on research done this way, we may finally be able to recommend policy choices for political practitioners and do so based on educated guesses about appropriate problems and their solutions. Schmitt-Grohé and Uribe have shown us the way.

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